



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Yasuyuki Kitayama et al.

Serial No. : 10/542,880

Filed : September 29, 2005

For : NEAR-INFRARED ABSORBING COMPOUND AND  
NEAR- INFRARED ABSORBING FILLER USING SAME

Examiner : Chu, Yong Liang

Art Unit : 1626

Confirmation  
No. : 8386

Customer No. : 42754

Attorney

Docket No. : 441P095

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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Kenneth S. Leavick  
Name of applicant, assignee, or Registered  
Representative

[Signature]  
Signature

February 12, 2008  
Date

Sir:

DECLARATION UNDER 37 C.F.R. 1.132

I, Toshitaka Toriniwa, hereby declare as follows:

That I was awarded a degree in bachelor of chemical engineering from  
Hokkaido University in 1997, and a degree in master of chemical engineering from  
Hokkaido University in 1999;

That I have been employed by Nippon Kayaku Kabushiki Kaisha for eight years

as an organic synthesis chemist, and that my current title is Research Scientist;

That I am familiar with the above-identified patent application, as well as its file history;

That I have read and understand JP2000-211239 to Santo, entitled "Recorded Media Containing Near-infrared Absorbing Compound and Method for Forming Record Image Using said Media", and US Patent Publication No. 2002/0033661 to Sugimachi, entitled "Electromagnetic-wave Shielding and Light Transmitting Plate and Display Device"; and

That the following tests were conducted by me or under my supervision:

With regard to the heat resistance evaluation of the claimed compound by decomposition temperature measurement

In order to demonstrate the heat stability of the claimed compound of Example 8 in the instant specification, I carried out the measurement of the decomposition temperature thereof as well as of the compounds of Comparative Examples 3 and 4. The test conditions are as follows:

Measurement Method:

Determine a decomposition temperature with the indication of the temperature at which the loss of weight initiates, using a thermogravimetric differential thermal analysis apparatus (commonly called as TG-DTA).

Measurement Condition:

Raise temperature from room temperature to 500 °C (raising rate: 10 °C/min, air flow rate: 200 cc/min).

Apparatus:

SSC5200 (TG/DTA220) of Seiko Instruments Inc.

The test result is shown below.

Test Sample	Decomposition Temp.
diimonium compound used in Example 8	300 °C
diimonium compound used in Com. Example 3	260 °C
diimonium compound used in Com. Example 4	266 °C

As is shown by the above result, it has been demonstrated that the claimed diimonium

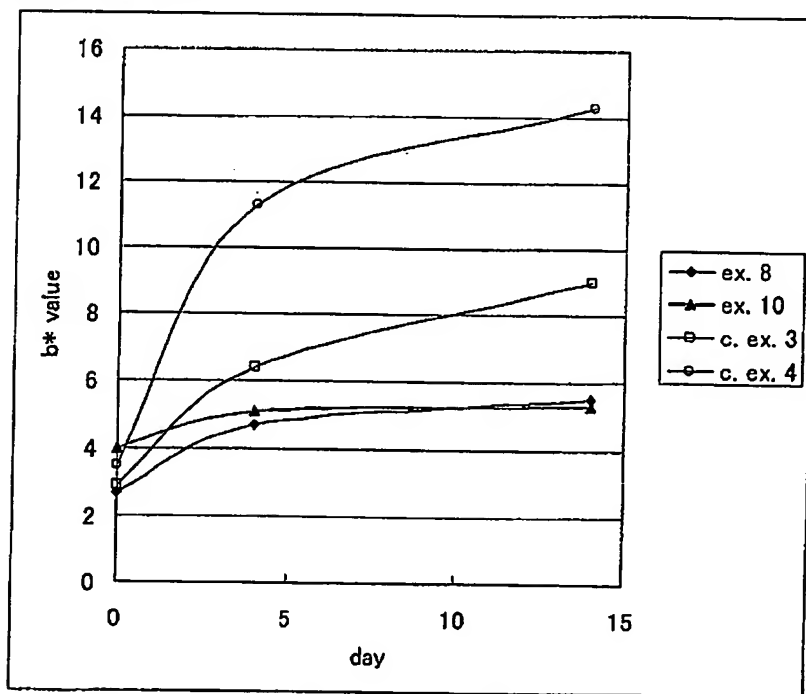
compound shown as Example 8 in the instant application is a near infrared absorbing compound with excellent heat resistance.

With regard to Examples/Comparative Examples of Table 8 in the instant specification

The Examiner states that the comparison data in Table 8 among Examples 8, 10, and comparative examples 3 and 4 are at range of 5.5-6.5 versus 9.0-14.3 which are not significantly unexpected results. However, Table 8 demonstrates the near-infrared absorbing filters containing the claimed compound show smaller changes in the  $b^*$  value relative to those in the comparative examples (page 30, line 6 from the bottom to page 31).

The change of  $b^*$  value means the stability of the compound contained in the filter, which directly means the degree of degradation of filter per se. The Examiner seemingly focuses only on  $b^*$  value after 14 days. However, how the  $b^*$  value changes from the initial state is also important for degree of degradation, and it is insufficient to merely evaluate only  $b^*$  value after 14 days. This can be clarified by making a graph of the data listed in Table 8, as shown in the following Figure 1. The data in Figure 1 are not the ones obtained by new experiments, but are the same as those listed in Table 8 in the instant specification.

Figure 1 Graph of data in Table 8 with horizontal axis of passing days and longitudinal axis of  $b^*$  value.



As is evident from Figure 1, the graphs of Examples 8 to 10 demonstrate that the changes of  $b^*$  value from the initial value are small, and further the gradients of the graphs show that the degrees of degradation with the passing time tend to be small. In contrast, for Comparative Examples 3 and 4, the changes of  $b^*$  value from the initial value are large, and the gradients of the graphs thereof show that the degradation with the passing time are still processing.

The degree of degradation with the passing time is neither disclosed nor suggested In Santo and Sugimachi. Accordingly, the claimed invention is not obvious over Santo.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Toshitaka Toriniwa  
TORINIWA, Toshitaka

February 2, 2002  
Date